

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

SEVERSTAL NORTH AMERICA, INC.,
a Successor-in-Interest to ROUGE
STEEL COMPANY,

Plaintiff,

Case No. 06-CV-10202

vs.

HON. GEORGE CARAM STEEH

NORTH AMERICAN REFRACTORIES,
COMPANY and SPECIAL SHAPES
REFRACTORY COMPANY, INC.

Defendants.

_____/

ORDER DENYING IN PART AND GRANTING IN PART DEFENDANT SPECIAL
SHAPES REFRACTORY COMPANY'S MOTION FOR SUMMARY JUDGMENT AND
GRANTING NORTH AMERICAN REFRACTORIES COMPANY'S MOTION FOR
PARTIAL SUMMARY JUDGMENT

This products liability lawsuit arises out of a major industrial accident that occurred on January 29, 2003, when molten steel escaped from a ladle at the Rouge Steel plant causing an enormous fire. Although the exact cause of the accident is very much in dispute, the parties agree that the accident was caused by some failure of the nest block assembly which was placed into the bottom of the ladle to stir the molten steel. Plaintiff Severstal North America, Inc. ("Severstal") has brought suit against the alleged designer of the nest block assembly North American Refractories, Company ("NARCO") and against the manufacturer of the stir plug, Special Shapes Refractory Company, Inc. ("Special Shapes"). Severstal is the successor-in-interest to Rouge

Steel Company ("Rouge Steel") who was a major steel manufacturer. Both defendants have filed separate motions for summary judgment on the grounds, among other things, that Seversal caused the nest block assembly to fail by using a nonconforming plate and filling the gap that it created with mortar. Oral argument was heard on April 9, 2009. At that hearing, the Court granted the parties additional time to file supplemental briefs. Those briefs have now been filed and have been duly considered by this Court. For the reasons set forth below, defendant Special Shapes' motion shall be granted in part as to the breach of implied warranty and design defect claims and shall be denied as to the manufacturing defect claim and NARCO's motion for partial summary judgment shall be granted.

BACKGROUND

A. The Parties

Rouge Steel was a major domestic steel manufacturer that operated a 1200 acre manufacturing complex in Dearborn, Michigan. NARCO designs, manufactures, and sells various refractory products for the steel and glass making industry. NARCO's refractory products are made to withstand high temperatures like those found in the steelmaking industry. NARCO has sold its refractory products to Rouge Steel for over twenty years. NARCO designed the nest block assembly which was in ladle #21 at the time of the accident and sold it directly to Rouge Steel. NARCO contracted with Special Shapes to manufacture the pocket blocks, stir plugs and safety plates used in the nest block assembly.

B. The Nestblock Assembly

The nestblock assembly rests at the bottom of the ladle. The ladle is a vessel

designed to hold 250 tons of liquid steel. The nestblock assembly stirs the molten steel by pumping argon gas through a pipe that connects to the bottom of the stir plug and then the gas is emitted from tiny holes on the face of the stir plug. The holes in the plug are too small for the steel to penetrate due to the viscosity of the steel. Three components comprise the nestblock assembly: (1) the nest block itself, (2) the stir plug, and (3) the safety plate. NARCO contracted with Special Shapes to fabricate all three components using raw materials supplied by NARCO. The three components were designed to mate together in a coordinated assembly. The nest block is a round structure with a recess in the bottom and a hollow center designed to interlock with the stir plug. Once the plug is mated in the nest block, the plug and block are placed on the safety plate. The NARCO safety plate has an elevated center portion called a “raised boss” which is intended to prevent the plug from dropping into the recess at the bottom of the plug or from shifting laterally, as either movement would allow molten steel to escape. It also is made of high alumina (85 percent) refractory material which means that it can sustain very high levels of heat.

C, The Stir Plug

The subject of this litigation is the stir plug. The stir plug is a porous product through which inert gas is run through piping at the bottom of the ladle. The inert gas stirs the molten steel and removes impurities to produce a uniform steel mixture. Before it is placed in the ladle, the stir plug is inserted into the nest block assembly. The stir plug has a recessed bottom and the NARCO safety plate has a raised area that fits into the stir plug bottom. The NARCO plate was not attached to the nest block assembly when it was shipped to Rouge Steel, but Rouge Steel employees were to install the

plate and place the assembly into the ladle.

D. The Nestblock assembly involved in the accident

There is no dispute that the nestblock assembly involved in the accident had only two of the three components supplied by NARCO - the nest block and the stir plug. For several months prior to the accident, due to a contract dispute with NARCO, Rouge Steel began replacing the safety plate with a plate manufactured by AJF, Inc. ("AJF"). AJF is a refractory manufacturer located in New Boston, Michigan. The AJF plate, unlike the NARCO safety plate, did not contained a raised area that could fit into the recessed bottom of a stir plug. According to NARCO, the AJF plate had a lower level of alumina refractory material than the NARCO safety plate, and thus, could withstand less heat. Rouge Steel employees installed the AJF plate. The AJF plate was a flat plate without a raised boss in the center which left a 3/4 inch gap between the bottom of the stir plug and the top of the AJF plate. Rouge Steel employees filled the gap with a high strength mortar known as Vesuvius Super 3000. Severstal asserts that Super 3000 has exceptional strength at high temperatures and is recommended as excellent for all types of molten metal applications.

E. The Steelmaking Process

Steelmaking operations at Severstal take place in two facilities: the Basic Oxygen Furnace (BOF) and the casting facility (caster). BOF operations involve melting various raw materials (iron, scrap, coke, nickel) in enormous industrial surfaces into liquid steel whose optimal temperature is 2,950 to 3,000 degrees. The liquid steel is poured into ladles that can hold up to 250 tons. Rouge Steel calls the process of filling a ladle with liquid steel "tapping" a ladle with "heat." Once a ladle is "tapped," the liquid steel is

“stirred” by injecting argon gas through the stir plug located at the bottom of the ladle. After a ladle is “tapped,” it is moved by a 400 ton crane to a ladle stand at the south end of the BOF. From there, the ladles are moved to the caster on a vehicle known as a Klein hauler.

F. The Accident

On the night of the accident, several heats had been tapped in the first hour of the midnight shift. Ladle #21 was tapped at 12:44 a.m. At about 1:15 a.m., a driver of a Klein hauler, retrieved ladle #21 from the ladle stand and left the BOF heading for the caster. As he left the BOF, liquid steel began leaking from the bottom of the ladle. His managers told him to return to the BOF. As he did so, ladle #21 failed, all of the remaining liquid steel, approximately 250 tons of it, escaped from the bottom of the ladle, and an enormous fire ignited. The driver was nearly killed, and ladle #21, the ladle stand, and the Klein hauler were destroyed. BOF operations were shut down for 24 hours.

G. The Investigation

Rouge Steel conducted an investigation of the accident and prepared a draft report on the date of the incident. (Doc. 148, Ex. C). According to that report, the cause of the ladle failure was connected to the stir block:

Inspection of ladle #21 revealed that the porous insert in the stir block was missing and could not be found. The rest of the stir block was present and the inside of the plug insert surface was smooth and undamaged, indicating that the insert had fallen cleanly out. The cause of the insert failure has not been able to be determined at this time. The stir block had been in service for 411 stir minutes prior to this heat (normal life is in excess of 1,000 stir minutes). The length of the stir block remaining in the ladle indicated that the stir unit would not have been near the end of its expected service. The ladle had been inspected visually prior to the heat,

and the plug did not appear to be compromised in any manner.

(Doc. 148, Ex. C).

On February 6, 2003, Rouge Steel and NARCO inspected ladle #21. After the inspection, NARCO issued a written report dated February 21, 2003. In that report, NARCO noted its "Conclusions and Recommendations" as follows:

It appears that the plug was dislodged from the pocket block, which allowed steel to penetrate around the plug. The cause of the plug dislodging was unable to be determined. The steel van breached the spacer plate through the hole for the piped into the block/plate interface when the shell opening became large enough the plug fell out, which led to the heat being poured through the pocket block and into the pit. A section of the spacer plate showed heavy erosion through the center of the plate.

The spacer plates currently used do not have a male dowel section which creates a 13 mm gap between the base of the plug and plate. This eliminates the support of the plug that the original design supplied, providing only the mortar to hold the plug in the block. In addition to eliminating the support of the plug the gap created by the lack of male dowel section creates a place for the steel to pool and reduces the chance of the steel freezing.

(Doc. 148, EX. F).

H. The Cause of the Accident

Defendants contend that the most likely cause of the January 29, 2003 accident was Rouge Steel's modification of the nest block assembly by the use of the flat plate manufactured by AJF rather than the safety plate designed by NARCO and manufactured by Special Shapes. Defendants allege that the use of the nonconforming plate cause a 3/4 inch gap between the bottom of the stir plug and the top of the plate that Rouge Steel filled with mortar. Defendants contend that the mortar likely gave way causing the stir plug to dislodge from the pocket block and drop toward the AJF plate.

Once the stir plug dislodged, the liquid steel would have penetrated between the pocket block and the stir plug, which after several minutes, cut through the AJF plate and the ladle bottom.

Severstal alleges that the accident was caused by a manufacturing defect in the NARCO stir plug which was fabricated by Special Shapes. In response to defendants' motions for summary judgment Severstal stated that its "theory does not rely upon either a design or failure to warn theory. However, Defendants have argued that the loss occurred as a result of the use of the AJF plate. Should the trier of fact accept Defendants' theory, however, Severstal will argue that it is entitled to a verdict on the theories of design defect and failure to warn. Because NARCO and Special Shapes argue the accident happened because Severstal used the AJF plate, the Court's analysis here will address all three theories of liability: manufacturing defect, design defect, and failure to warn.

I. The Complaint

Plaintiff has brought a six-count complaint against NARCO and Special Shapes. Count I alleges breach of express warranty against NARCO. Count II alleges breach of contract against NARCO. Count III alleges negligence for design defect and manufacturing defect against NARCO and Special Shapes and failure to warn against NARCO only. Count IV alleges breach of implied warranty against NARCO and Special Shapes. Count V alleges breach of implied warranty of merchantability against NARCO. Count VI alleges breach of implied warranty of fitness for a particular purpose against NARCO.

J. Defendants' motions for summary judgment

Now before the Court are two motions for summary judgment. Special Shapes seeks summary judgment as to Severstal's claim of manufacturing defect, design defect, and breach of implied warranty.¹ Special Shapes argues that it cannot be liable for design defect as it did not design the stir plug. Special Shapes contends that it cannot be liable for manufacturing defect because the stir plug was never recovered and Severstal's circumstantial evidence, comprised primarily of the opinions of its proffered experts, amounts to rank speculation. Moreover, Special Shapes argues that Severstal has failed to prove causation as its theory of liability is no more likely than defendants' theory that the accident occurred because Rouge Steel modified the nest block by substituting NARCO's safety plug with a flat plate manufactured by AJF and then filling the gap created by the nonconforming part with mortar.

NARCO seeks summary judgment as to Rouge Steel's design defect claim, and summary judgment as to its failure to warn claim and breach of implied warranty claims under the sophisticated user doctrine. Although NARCO's motion for summary judgment was not titled a motion for "partial" summary judgment, NARCO's motion did not address Rouge Steel's claims for breach of express warranty (Count I), breach of contract (Count II), or manufacturing defect (Count III, ¶ 31(b)) and thus, this order does not address those claims with respect to NARCO.

¹Special Shapes also argues it is entitled to summary judgment as to Rouge Steel's claims of breach of contract, breach of express warranty and failure to warn, but a review of the Complaint shows that Severstal only brought these claims against NARCO.

STANDARD FOR SUMMARY JUDGMENT

Federal Rule of Civil Procedure 56(c) empowers the court to render summary judgment "forthwith if the pleadings, depositions, answers to interrogatories and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." See Redding v. St. Edward, 241 F.3d 530, 532 (6th Cir. 2001). The Supreme Court has affirmed the court's use of summary judgment as an integral part of the fair and efficient administration of justice. The procedure is not a disfavored procedural shortcut. Celotex Corp. v. Catrett, 477 U.S. 317, 327 (1986); see also Cox v. Kentucky Dept. of Transp., 53 F.3d 146, 149 (6th Cir. 1995).

The standard for determining whether summary judgment is appropriate is "whether the evidence presents a sufficient disagreement to require submission to a jury or whether it is so one-sided that one party must prevail as a matter of law." Amway Distributors Benefits Ass'n v. Northfield Ins. Co., 323 F.3d 386, 390 (6th Cir. 2003) (quoting Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 251-52 (1986)). The evidence and all reasonable inferences must be construed in the light most favorable to the non-moving party. Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp., 475 U.S. 574, 587 (1986); Redding, 241 F.3d at 532 (6th Cir. 2001). "[T]he mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment; the requirement is that there be no genuine issue of material fact." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 247-48 (1986) (emphasis in original); see also National Satellite Sports, Inc. v. Eliadis, Inc., 253 F.3d 900, 907 (6th Cir. 2001).

If the movant establishes by use of the material specified in Rule 56(c) that there is no genuine issue of material fact and that it is entitled to judgment as a matter of law, the opposing party must come forward with "specific facts showing that there is a genuine issue for trial." First Nat'l Bank v. Cities Serv. Co., 391 U.S. 253, 270 (1968); see also McLean v. 988011 Ontario, Ltd., 224 F.3d 797, 800 (6th Cir. 2000). Mere allegations or denials in the non-movant's pleadings will not meet this burden, nor will a mere scintilla of evidence supporting the non-moving party. Anderson, 477 U.S. at 248, 252. Rather, there must be evidence on which a jury could reasonably find for the non-movant. McLean, 224 F.3d at 800 (citing Anderson, 477 U.S. at 252).

ANALYSIS

A. Special Shape's motion for summary judgment

Jurisdiction is based on diversity and thus, the parties agree that Michigan law controls the substantive law of this products liability action. Severstal's Complaint alleges design defect, manufacturing defect, and breach of implied warranty against Special Shapes. (Complaint, Counts III and IV). Special Shapes argues that it is entitled to summary judgment as to the design defect claim as it did not design the components of the pocket block assembly. Special Shapes did not specifically discuss the breach of implied warranty claim, but argues in general, that it is entitled to summary judgment as to all claims pending against it. In its response brief, Severstal only addresses its manufacturing defect claim against Special Shapes. Thus, it appears that Severstal has abandoned its claims for design defect and breach of implied warranty

against Special Shapes and summary judgment shall so enter.²

Unlike a design defect claim, a manufacturing defect claim analyzes whether a single product deviated from its intended production. “A manufacturer will be held liable for manufacturing defects existing at the time of manufacture.” Gregory v. Cincinnati, Inc., 450 Mich. 1, 11 n.7 (1995). In order to prove a manufacturing defect, Severstal must prove that the product was not in its intended condition because something went wrong in the manufacturing process. Prentis v. Yale Mfg. Co., 421 Mich. 670, 683 (1984). To prove a defect, the product “may be evaluated against the manufacturer’s own production standards, as manifested by that manufacturer’s other like products.” Id. A manufacturing defect claim requires proof of “a defect attributable to the manufacturer and causal connection between that defect and the injury or damage of which he complains.” Crews v. Gen’l Motors Corp., 400 Mich. 208, 217 (1977) (quoting Piercefield v. Remington Arms Co., 375 Mich. 85, 98-99 (1965)). Manufacturing defects require an “examination of the product itself rather than the manufacturer’s conduct.” Gregory, 450 Mich. at 13 n. 10.

The Michigan Supreme Court has held that to survive a motion for directed verdict, which is analogous to a motion for summary judgment, “the question is whether it is reasonable to infer from the evidence, direct or circumstantial, that the accident was probably caused by a defect attributable to the manufacturer.” Mulholland v. DEC Int’l Corp., 432 Mich. 395, 415 (1989) (quoting Holloway v. General Motors Corp., 403 Mich.

²Even if Severstal has not abandoned its design defect and breach of implied warranty claims against defendant Special Shapes, those claims still must be dismissed for the reasons discussed in this Court’s analysis of NARCO’s motion for summary judgment.

614, 622 (1978)). The Supreme Court has explained that the plaintiff need not negate all other theories of liability. Id. “It is enough that the plaintiff establishes a logical sequence of cause and effect, notwithstanding the existence of other plausible theories, although other plausible theories have evidentiary support.” Id. (citing Holloway, 403 Mich. at 623). In Mulholland, the plaintiff’s proffered expert testified that the cause of plaintiff’s cows’ mastitis was a defective milking machine while defendant’s came forward with evidence that the mastitis was actually caused by the rapid introduction of new cows into the herd, unsanitary stalls, lime bedding and mud in the barnyard. Id. at 416. The plaintiffs’ own proofs, however, also provided some evidentiary support for the defendant’s competing theory of liability. Id. But viewing the evidence in the light most favorable to the nonmoving party, the Supreme Court held that the testimony of plaintiff’s expert was sufficient to create a triable issue for the trier of fact. Id. at 416-17.

Similarly, in Holloway, the Michigan Supreme Court ruled that a plaintiff may establish a manufacturing defect based on circumstantial evidence alone, even without expert testimony. 403 Mich. at 629. The Supreme Court explained that the plaintiff is not “obliged to eliminate all possible causes of the accident consistent with the view that there was no manufacturing defect. He sustains his burden when he establishes with direct or circumstantial evidence a reasonable probability that the defect is attributable to the manufacturer.” Id. at 621. To survive a motion for a directed verdict, or by analogy a motion for summary judgment, plaintiff must show that the accident was “probably caused” by a manufacturing defect, but “[q]uestions of comparative probability are to be resolved by the trier of fact.” Id. at 622.

In Hollaway, the victim was killed, and his daughter seriously injured, when a car

he was driving veered off the road, hit a ditch, and then collided with a utility pole. Id. at 619. The victim's wife brought suit against General Motors on the theory that a defective ball joint assembly in the right front suspension was defective and broke when the vehicle hit potholes in the road. Id. In the first case, General Motors argued that the ball joint assembly did not break until after the driver veered off the road and struck the pole, but for purposes of rehearing, General Motors conceded that the break occurred on the roadway. Id. at 620. In that case, the circumstantial evidence consisted only of the recovery of the ball joint assembly which both sides agreed revealed a fresh, metallurgically clean break, due to an impact failure. Id. at 624. The Supreme Court found that this circumstantial evidence was sufficient to support "a reasonable inference that the accident was probably caused by a defect attributable to the manufacturer." Id. General Motors argued that the recovery of the ball joint assembly was insufficient to support a manufacturing defect claim and that the plaintiff needed to prove the specific cause of the defect. Id. at 626. The Supreme Court disagreed and ruled that plaintiff need not identify the specific defect in order to raise a question for the trier of fact concerning manufacturing defect. Id. at 627-29. In a case based on circumstantial evidence, the plaintiff must put forth evidence from which a jury could conclude that more likely than not, but for the defendant's conduct, the plaintiff's damages would not have occurred. Skinner v. Square D. Co., 445 Mich. 153, 164-65 (1994).

Special Shapes argues that Severstal cannot establish a manufacturing defect because (1) the only circumstantial evidence consists of unreliable expert testimony, (2) Rouge Steel employees who testified that the problem was related to the stir plug could not identify any specific problems with the stir plug, and (3) the stir plug was not

recovered after the accident. In its response brief, Severstal only directly responds to the first of Special Shapes' arguments and claims that its experts are well qualified. Severstal also argues that it survives summary judgment based not only on the testimony of its experts, but because the expert testimony offered by Special Shapes should be rejected as sheer speculation, and Severstal had completely filled the void created by the AJF plate with mortar. Finally, Severstal argues that its manufacturing defect claim survives summary judgment because Special Shapes failed to abide by industry standard quality control procedures.

a. Expert Testimony

Severstal relies on the testimony of its proffered expert, Dr. Robert Pehlke. Dr. Pehlke submitted an opinion paper which concluded that the stir plug failed. (Doc. 161, Ex. C). His opinion was based on many factors, including the physical evidence of the recovered nest block which he alleges showed that the flow of molten steel began through the area where the stir plug was inserted into the nest block. (*Id.*). Dr. Pehlke also opined that the "mortar reported is strong and should provide an excellent supporting enclosure for the stir plug." (*Id.*). Special Shapes argues that Dr. Pehlke's testimony fails to support plaintiff's manufacturing defect claim because the stir plug was never investigated following the incident. Dr. Pehlke could not have inspected the stir plug after the accident as it was destroyed in the breakout and was never recovered. The fact that a product is destroyed in an accident does not vitiate all theories of products liability. It merely means that Severstal must rely on circumstantial, rather than direct, evidence to support its claim.

Special Shapes also argues that Dr. Pehlke's testimony must be disregarded

because he failed to consider other possible causes of the accident, such as that the ladle or stir plug could have been damaged during its handling, transport or maintenance. Again, these criticisms may be considered by the fact finder at trial but do not support the entry of summary judgment here.

Special Shapes argues that Severstal's use of the testimony of Dr. Semlar also fails to support plaintiff's manufacturing defect claim because Dr. Semlar did not analyze prior ladle accidents at Rouge Steel, did not consider other possible causes of the accident, and did not perform any statistical analysis of stir plug performance. In its response brief, Severstal has not submitted Dr. Semlar's expert report or deposition or otherwise discussed his opinion except that it attached his curriculum vitae in response to NARCO's motion for summary judgment. Thus, it does not appear that plaintiff is relying on Dr. Semlar's expert opinion to survive summary judgment. Based on the expert report of Dr. Pehlke, combined with the other circumstantial evidence discussed below, Severstal survives summary judgment as to its manufacturing defect claim without the Court's consideration of Dr. Semlar's expert opinion.

b. Other circumstantial evidence

In addition to the testimony of Dr. Pehlke, Severstal has come forward with other circumstantial evidence in support of its manufacturing defect claim. Severstal relies on the remnants of the nest block which survived the incident which its experts relied upon in forming their opinions. Severstal also relies on the testimony of Norman Jones, Special Shapes' plant manager at the time of the accident who stated that it would have been very difficult to remove a stir plug from the block assembly once it had been mortared into place, and would have been even more difficult, after it had endured the

15 heats it had already undergone. (Doc. 161, Ex. D and F). Severstal also relies on the testimony of former NARCO employee and NARCO plate designer, Lonnie Powell, who testified that use of the flat plate was probably “fine.” (Doc. 161, Ex. J). Powell is now employed by Special Shapes.

Severstal also argues that the testimony of Special Shapes’ expert, James Menendez, that the cause of the accident was a failure of the mortar to hold the stir plug in place, should be disregarded because his opinion is sheer speculation, fails to explain how the stir plug became dislodged, and fails to consider that even the NARCO safety plate does not contact the bottom of the stir plug. Severstal argues that Menendez’s testimony is refuted by the fact that Rouge Steel used the AFJ plate and mortar since May of 2002 through thousands of heats without incident. Just as Special Shapes’ criticisms of Severstal’s experts failed to warrant their exclusion into evidence, so too Severstal’s attacks of Special Shapes’s expert likewise remain factors for the jury to consider. Severstal also relies on the testimony of Special Shapes’ own employees Vernon Fallin, test technician, and Norman Jones, plant manager, who testified that there is a 1/32 inch to 3/8 inch gap between the bottom of the stir plug and NARCO’s own safety plate. (Doc. 161, Ex. H at 34, Ex. I at 41). Given this alleged gap in NARCO’s own product, Severstal alleges that any gap that is to be blamed for the molten steel break out lies with the defendants. This testimony creates a triable issue of fact as to Severstal’s manufacturing defect claim. It appears that this case boils down to a battle of the experts which makes this action not a good candidate for summary judgment.

c. Quality control standards

In order to defeat Special Shapes' motion for summary judgment, Severstal also has come forward with evidence that Special Shapes failed to implement alleged industry recognized standards for quality control. Dr. Pehlke testified, that at a minimum, Special Shapes could have weighed the stir plugs after they were fired to make sure that the entire mold had been filled and there were no voids. (Doc. 161, Ex. U at 48-49). Special Shapes' design manager Donald Siebe testified that it did not maintain any written quality control procedures, but that everything was verbal. (Doc. 161, Ex. K at 106). Special Shapes' plant manager Norman Jones similarly testified that there were no written protocols regarding quality control procedures for the manufacture of stir plugs or nest block assemblies. (Doc. 161, Ex. R at 13). Special Shapes does not conduct quality control testing to determine density, cold crushing strength, or porosity of its stir plugs once they have been fired. (Doc. 161, Ex. L at 114, 183, Ex. P at 30). Special Shapes' Vice President and Chief Financial Officer, Karen Chittam, testified that she was aware that an industry quality control program exists as set forth by the International Standards Organization (ISO 9001) (Doc. 161, Ex. O at 24-25). She further testified that Special Shapes was not ISO certified because they are a small company without the staffing to perform the documentation needed, but she felt that the documentation they do maintain is adequate and works for their other customers. (Doc. 161, Ex. O at 25 - 26).

In its supplemental brief, Special Shapes argues that ISO 9001 does not promulgate any quality control or manufacturing protocols for any manufacturers but only provides certification that a manufacturer followed its own standards in a consistent fashion. In support of this argument, Special Shapes relies on the testimony of its

expert Menendez to this effect. Even taking as true Menendez's testimony, Severstal has still raised a genuine issue of material fact as to whether Special Shapes followed its own quality control standards and whether its standards are adequate. Moreover, in its supplemental brief, Severstal points out that Menendez's employer, Wheeling Pittsburgh Steel, was ISO 9001 certified and that this certification required that his employer used standardized methods of quality control. (Doc. 168, Ex. B at 38-39). Similarly, NARCO's expert David Eby testified that his employer Exponent adhered to ISO 9001. (Doc. 168, Ex. C).

In sum, Severstal has come forward with sufficient evidence to support its theory that the cause of the accident was a manufacturing defect in the stir plug to survive summary judgment. In support of its theory, Severstal relies on expert testimony, which was based in part on an analysis of the recovered nest block, as well as the testimony of Special Shapes' plant manager Norman Jones, and NARCO plate designer Lonnie Powell. Moreover, Severstal has come forward with additional circumstantial evidence in the form of testimony that Severstal did not maintain written quality control procedures and allegedly did not follow industry standards for quality control.³

³Severstal also argues that NARCO's alleged discovery abuses, namely its failure to provide documentation regarding other ladle breakouts and its failure to maintain the recovered portions of the AJF plate, requires an inference of product defect. Because this Court finds that Severstal survives summary judgment without discovery sanctions, the Court need not address the alleged discovery abuses at this time. Those issues are better reserved for motions in limine pre-trial.

B. NARCO's motion for summary judgment

1. Design defect

NARCO has filed a motion for summary judgment as to the design defect, failure to warn and breach of implied warranty claims. NARCO does not address plaintiffs' manufacturing defect claim. (Complaint, ¶ 31(b)). Severstal maintains that its primary theory of liability is that a manufacturing defect in the stir plug was the proximate cause of the molten steel breakout, but if NARCO's causation theory is correct, then the nest block assembly was defective in design.

Under Michigan products liability law, a negligent design defect claim requires an analysis of whether a risk-utility analysis favored an available safer alternative. Prentis v. Yale Mfg. Co., 421 Mich. 670, 687-91 (1984). The Michigan Supreme Court has adopted a "pure negligence, risk-utility test" to determine design defect claims. Id. Under that test, "[a] manufacturer has a duty to design its product so as to eliminate any unreasonable risk of foreseeable injury." Id. at 691. The question of duty begins with whether the product was defective when it left the manufacturer's control. Gregory v. Cincinnati Inc., 450 Mich. 1, 11-12 (1995). "[T]he element of defect is established by proofs that the manufacturer failed to do what a reasonably prudent person would do or did what a reasonably prudent person would not have done under the circumstances." Dooms v. Steward Bolling & Co., 68 Mich. App. 5, 14 (1976). The risk-utility balancing test "considers alternative safer designs and the accompanying risk pored against the risk and utility of the design chosen 'to determine whether . . . the manufacturer exercised reasonable care in making the design choices it made.'" Gregory, 450 Mich. at 13. Michigan's codified products liability law provides that under the risk-utility

balancing test, the plaintiff must show that (1) the product was not safe when it left the control of the manufacturer; and (2) a “feasible alternative production practice was available that would have prevented the harm without significantly impairing the usefulness or desirability of the product to users.” MCL § 600.2946(2); Gregory, 450 Mich. at 11-13. The Michigan Supreme Court has explained that plaintiff’s prima facie case of design defect must entail:

data or other factual evidence concerning the magnitude of the risks involved, the utility or relative safety of the proposed alternatives, or evidence otherwise concerning the “unreasonableness” of risks arising from [the allegedly defective design].

Owens v. Allis-Chalmers Corp., 414 Mich. 413, 432 (1982).

The Sixth Circuit, interpreting Michigan law, recently reaffirmed six factors that a plaintiff must establish under the risk-utility balancing test:

- (1) that the severity of the [harmful event] was foreseeable by the manufacturer;
- (2) that the likelihood of the occurrence . . . was foreseeable by the manufacturer at the time of distribution of the product;
- (3) that there was a reasonable alternative design available;
- (4) that the alternative available design was practicable;
- (5) that the available and practicable reasonable alternative design would have reduced the foreseeable risk of harm posed by the defendant’s product; and
- (6) that the omission of the available and practicable reasonable alternative design rendered the defendant’s product not reasonably safe.

Crosky v. BMW of North. Amer., 532 F.3d 511, 516 (6th Cir. 2008) (citing Hollister v. Dayton Hudson Corp., 201 F.3d 731, 738 (6th Cir.) (citing Reeves v. Cincinnati, Inc., 176 Mich. App. 181, 187-88 (1989), cert. denied, 531 U.S. 819 (2000))). Severstal has

failed to come forward with evidence to support these six factors. Notably, its experts do not testify that a reasonable alternative design was available or practicable.

To establish its prima facie case of design defect, plaintiff must show that the manufacturer's negligence was the "proximate cause" of the accident. Skinner, 445 Mich. at 162 (citation omitted). Causation requires proof of two elements: both cause in fact and proximate cause. Case v. Consumers Power Co., 463 Mich. 1, 6, n. 6 (2000); Skinner, 445 Mich. at 162-63. Cause in fact "generally requires a showing that 'but for' the defendant's actions, the [accident] would not have occurred." Skinner, 445 Mich. at 163. Proximate cause or legal cause "involves examining the foreseeability of consequences, and whether a defendant should be held legally responsible for such consequences." Id. (citations omitted). Unless a plaintiff can establish "cause in fact," there is no need to consider the issue of proximate cause. Id.

Plaintiff may use both direct and circumstantial evidence to prove design defect. Croskey, 532 F.3d at 516. But where circumstantial evidence is used, "[t]o be adequate, a plaintiff's circumstantial proof must facilitate reasonable inferences of causation, not mere speculation." Skinner, 445 Mich. at 164. The plaintiff need not negate every other theory of causation, rather the "plaintiff's evidence is sufficient if it 'establishes a logical sequence of cause and effect, notwithstanding the existence of other plausible theories, although other plausible theories may also have evidentiary support.'" Id. at 159-60 (quoting Mulholland v. DEC Int'l, 432 Mich. 395, 415 (1989)). A plaintiff will not survive a motion for summary judgment based on the mere possibility of causation or even where "the probabilities are at best evenly balanced." Id. at 165 (citations omitted). Plaintiff must show that its theory of causation is "more likely than

not” the real reason for the product’s defect. Id. “The mere possibility that a defendant’s negligence may have been the cause, either theoretical or conjectural, of an accident is not sufficient to establish a causal link between the two.” Id. at 165-66 (citing Jordan v. Whiting Corp., 396 Mich. 145, 151 (1976)).

In this case, Severstal’s design defect claim fails because Severstal has only shown one possible theory of causation but has not shown that its theory is “more likely than not” the cause of the product’s alleged defect. In support of its design defect claim, Severstal relies on the opinion paper of Dr. Pehlke. Severstal also has submitted the curriculum vitae of its expert Dr. Semlar. NARCO argues that neither are qualified under Fed. R. Civ. P. 702 to act as experts. Once a witness is deemed qualified to testify as an expert, he or she may offer opinion testimony if “(1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.” Fed. R. Civ. P. 702.

In Daubert v. Merrell Dow Pharm, Inc., 509 U.S. 579 (1993) and Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999), the Supreme Court set forth the standard for district courts to consider while exercising their gatekeeping role of determining whether expert testimony is admissible. Under those decisions, the Court must first determine whether the expert is qualified and that his or her opinions are relevant and reliable which “entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.” Sigler v. American Honda Motor Co., 532 F.3d 469, 478 (6th Cir. 2008) (quoting Champion v. Outlook Nashville,

Inc., 380 F.3d 893, 907 (6th Cir. 2004) (quoting Daubert, 509 U.S. at 589, 592-93), cert. denied, 544 U.S. 975 (2005)). “[U]nder Daubert and its progeny, a party proffering expert testimony must show by a ‘preponderance of proof’ that the expert whose testimony is being offered is qualified and will testify to scientific knowledge that will assist the trier of fact in understanding and disposing of’ relevant issues.” Id. (quoting Pride v. BIC Corp., 218 F.3d 566, 575 (6th Cir. 2000)). In considering whether the expert’s testimony is reliable, the Daubert Court identified several factors for the district court to consider: “the testability of the expert’s hypotheses . . . , whether the expert’s methodology has been subjected to peer review, the rate of error associated with the methodology, and whether the methodology is generally accepted within the scientific community.” Id. (quoting Daubert, 509 U.S. at 593-94). A district court’s decision to allow or to exclude expert testimony will be upheld absent an abuse of discretion. Gen’l Elec. Co. v. Joiner, 522 U.S. 136, 143 (1997).

NARCO argues that none of Severstal’s proffered experts are “qualified” by “knowledge, skill, experience, training, or education.” NARCO relies on the admissions of Dr. Pehlke and Dr. Semler that they have never designed plug and block assemblies. (Doc. 147, Ex. D at 35, Ex. E at 87-88).⁴ NARCO’s argument that Dr. Pehlke and Dr. Semler are not qualified to offer opinions as to the cause of the accident is not convincing. Severstal maintains that Dr. Pehlke and Dr. Semler have a long history in the refractory and steelmaking business. Severstal has attached the curriculum vitae

⁴ NARCO also alleges that Rouge Steel’s reliance on Dr. Kim’s testimony fails to support Severstal’s design defect claim. Severstal does not discuss Dr. Kim’s testimony in its response brief; thus, the Court does not address the question of whether he is qualified as an expert.

for both proffered experts and their backgrounds are quite impressive. (Doc. 162, Ex. G and H). Without discussing all of the qualifications of Dr. Pehlke, the Court is impressed that Dr. Pehlke holds a Bachelor of Science in Metallurgical Engineering from the University of Michigan, and a Master of Science and a Doctor of Science, both in Metallurgy, both from the Massachusetts Institute of Technology. (Doc. 162, Ex. G). He has served on the faculty of the University of Michigan for 43 years and his research has covered a broad range of metallurgical subjects with an emphasis on high temperature physical chemistry of metallurgical systems, particularly as they relate to iron and steelmaking. (*Id.*). Dr. Semler is likewise notably impressive. He obtained a Masters in Science in Geology from Miami University and a Doctorate in Mineralogy from The Ohio State University. He is employed as a Refractories Consultant for a broad range of industries including the steel industry and he has acted as an expert witness in over 60 refractories cases. Even a cursory review of the curriculum vitae of Drs. Pehlke and Semler shows that they are qualified as experts in the refractory and steel making business and the fact that they have not invented a stir plug themselves does not alter this conclusion. Although plaintiff's experts are qualified, their opinions fail to support plaintiff's design defect and breach of implied warranty claims.

Even assuming that Rouge Steel's experts are "qualified," NARCO argues that it is entitled to summary judgment on the design defect claims as their reports fail to show that the nest block was not reasonably safe for its foreseeable uses and that a risk-utility analysis favored a safer design. *See Prentis*, 421 Mich. at 688; *Owens*, 414 Mich. at 432; *Croskey v. BMW of North Amer.*, 532 F.3d 511, 516 (6th Cir. 2008). NARCO alleges that none of Severstal's experts have conducted an analysis as to the

magnitude of the foreseeable risks presented by the design, nor have they proposed any alternative design, or offered any basis that an alternative design would be safer or that it would be practical to implement. NARCO further contends that none of plaintiff's experts conducted any tests and they constructed no exemplars. NARCO further argues that the record is devoid of any evidence concerning the likelihood of occurrence of the type of accident precipitating the need for the safety device and the severity of the injuries sustainable from such an accident. According to NARCO, Severstal has failed to show any alternative safety device and any evidence that such a device would have been a reasonable means of minimizing the foreseeable risk of harm. This Court agrees.

The Court has carefully reviewed Dr. Pehkle's opinion paper and finds that even if his conclusions survive NARCO's Daubert challenge, they fail to adequately support plaintiff's design defect claim. Dr. Pehlke opined that the stir plug failed causing the accident. He based his opinion on several factors, including his analysis that the removal of the pocket block showed that no steel had come through the block from around its perimeter, the pocket block was completely intact and there was 11" of block remaining, and based on the wear profile of the pocket block. Even viewed in a light most favorable to Severstal, however, Dr. Pehkle's conclusions merely reflect one possibility of liability and do not show that more likely than not, the failure of the stir plug caused the accident.

In addition to expert testimony, Severstal relies on the testimony of NARCO's own employees to support its design defect claim. Severstal relies on the testimony of NARCO plate designer Lonnie Powell who testified that "flat plates were probably fine."

Severstal also relies on the testimony of NARCO's Regional Business Manager, William Wagstaff, who testified that use of a flat plate was fine "as long as the void is full, there is no problem. It just needs to be filled." (Doc. 162, Ex. D). Although Wagstaff did not suggest filling the void with mortar, Severstal seeks to rely on a letter that NARCO had sent in 2000 to Rouge Steel suggesting that any void between the NARCO safety plate and the stir unit be filled with mortar. (Doc. 162, Ex. E). NARCO responds that the letter merely supports its "sophisticated user" defense which is discussed later in this opinion. In support of its design defect claim, Severstal also relies on Powell's testimony that Special Shapes now ships the nest block assemblies with the safety plates attached and could have shipped them that way at the time of the accident. (Doc. 162, Ex. F at 77). If NARCO believed that the nest block assembly could only have been used with the NARCO safety plate, then Severstal argues that NARCO should have shipped all of the components together, or at a minimum, should have warned Severstal of this requirement. NARCO responds that Severstal was a "sophisticated user" which vitiates it of liability for failure to warn as discussed later in this opinion. NARCO's "sophisticated user" argument is well taken as discussed below.

2. Breach of Implied Warranty

Plaintiff also brings a claim against NARCO for breach of implied warranty. Breach of implied warranty and negligent design are two distinct theories of recovery but involve the same elements of proof. "When proceeding under a theory of implied warranty, a design defect is established by proof that the product is not reasonably safe for the uses intended, anticipated, or reasonably foreseeable." Prentis, 421 Mich. at 693 (citations omitted). The difference between negligent design and breach of implied

warranty is that the negligent design theory focuses on the conduct of the manufacturer while the breach of implied warranty theory focuses on the fitness of the product itself. Id. “[T]he only time the distinction between implied warranty and negligence may have any significance in design defect cases, is in determining the liability of a seller who is not also the manufacturer of a product.” Id. at 692, n. 30. “To establish breach of implied warranty, the plaintiff must show that a defect in the product, attributable to the manufacturer, caused [the harm].” Hartford Fire Ins. Co. v. Walter Kidde & Co. Inc., 120 Mich. App. 283, 292 (1982) (quoting Abel v. Eli Lilly & Co., 94 Mich. App. 59, 70 (1979), aff’d, 418 Mich. 311 (1984)). To prove a breach of implied warranty claim, plaintiff must “prove a defect attributable to the manufacturer and causal connection between the defect and the injury or damage of which he complains.” Gregory v. Cincinnati, Inc., 450 Mich. 1, 12 (1995) (quoting Piercefield v. Remington Arms Co., 375 Mich. 85, 98-99 (1965)). For the same reasons NARCO is entitled to summary judgment on its design defect theory of negligence (Complaint, Count III, ¶ 31(a)), it also is entitled to summary judgment as to its breach of implied warranty theories (Complaint, Counts IV, V, and VI).

3. Failure to warn

Severstal also alleges that NARCO is liable under the theory of failure to warn. Under Michigan law, in order to prove that a product is defective for failure to warn, a plaintiff must show that the manufacturer (1) had actual or constructive knowledge of the alleged danger, (2) had no reason to believe that those that use the product would know of this danger, and (3) failed to exercise reasonable care to inform users of the danger or of the facts which make it likely to be dangerous. Glittenberg v. Doughboy

Recreational Indus., 441 Mich. 379, 389-90 (1992); Hollister v. Dayton Hudson Corp., 201 F.3d 731, 741 (6th Cir.), cert. denied, 531 U.S. 819 (2000). In order to prove a failure to warn claim, the plaintiff must prove causation, in other words it must show that if warned of the danger, it would have altered its behavior to avoid the harm. Allen v. Owens-Corning Fiberglas Corp., 225 Mich. App. 397, 406 (1982).

In addition to the common law, Michigan has legislated the burden of proof and duty of care in a failure to warn case. MCL § 600.2948 provides:

(2) The defendant is not liable for failure to warn of a material risk that is or should be obvious to a reasonable prudent product user or a material risk that is or should be a matter of common knowledge to persons in the same or similar position as the person upon whose injury or death the claim is based in a product liability action.

(3) In a product liability action brought against a manufacturer or seller for harm allegedly caused by a failure to provide adequate warnings or instructions, the manufacturer or seller is not liable unless the plaintiff proves that the manufacturer knew or should have known about the risk of harm based on the scientific, technical, or medical information reasonably available at the time the specific unit of the product left the control of the manufacturer.

(4) This section does not limit a manufacturer or seller's duty to use reasonable care in relation to a product after the product has left the manufacturer's or seller's control.

NARCO argues that it cannot be liable under the theory of failure to warn or under the theory of breach of implied warranty because Severstal is a sophisticated user of the nest block. Under Michigan law, "a manufacturer or seller is not liable in a product liability action for failure to provide an adequate warning if the product is provided for use by a sophisticated user." MCL § 600.2947(4). Michigan law defines a sophisticated user as "a person or entity that, by virtue of training, experience, a profession, or legal obligations, is or is generally expected to be knowledgeable about a

product's properties, including a potential hazard or adverse effect." MCL § 600.2945(j). NARCO relies on the testimony of Rouge Steel's head of the masonry department, Jim Boggs, who testified that his workers installed the nest blocks and that they did not consult with NARCO before filling the void, caused by the AJF plate, with mortar. (Doc. 147, Ex. C). Boggs testified that the mortar used was Vesuvias 3000 super mortar. (Doc. 165, Ex. A at 38-40). Severstal argues that it is sophisticated in the manufacture of steel, not in the manufacture of refractory products.

Severstal argues that NARCO should have warned it that it could only use the nest block assembly with the NARCO safety plate. In support of this claim, Severstal relies on a letter sent by NARCO's sale representative David Carrol to Jim Boggs on August 11, 2000 which states, "[t]he safety plate must be fitted flush against the bottom of the stir unit for the plate to function effectively in the unlikely case of a plug failure. It may be fitted dry or preferably with mortar." (Doc. 147, Ex. B). While NARCO contends that this letter proves that Severstal was a sophisticated user, Severstal maintains that the letter merely offers support for its practice of filling the void created by use of the AJF plate with mortar. Severstal argues that the August 11, 2000 letter did not constitute a valid warning because it was impossible to fit the stir plug flush against the bottom of the stir unit when fitted dry. During his deposition testimony, the designer of the nest block assembly, Lonnie Powell, described Rouge Steel as "stupid" in discussing Rouge Steel's examination of the stir plug for wear indicators. (Doc. 162, Ex. C at 125). Severstal argues that this characterization suggests that Rouge Steel was not a sophisticated user.

NARCO relies on Irrer v. Milacron, Inc., 484 F. Supp. 2d 677 (E.D. Mich. 2007) in

support of its claim that Severstal was a “sophisticated user” and thus, its failure to warn claim must be dismissed. Under the reasoning of Irrer, Severstal was a sophisticated user of the nest block assembly and thus, NARCO is entitled to summary judgment as to plaintiff’s failure to warn and breach of implied warranty claims. In Irrer, over 250 employees of General Motors Corporation (“GM”) sued Milacron, the manufacturer and supplier of industrial metalworking fluids (“MWFs”) for allegedly failing to warn them of the dangers of exposure to MWFs. Judge Edmunds dismissed the failure to warn claims on the basis that GM was a “sophisticated user” of the MWFs. Id. at 694. The reasons for GM’s status as a “sophisticated user” were many, most significantly, prior to its contract with Milacron, GM managed its own MWF system with its own employees and for a year after Milacron began chemical management work at the plants, GM employees trained Milacron workers as to how GM managed its MWFs, and GM continued to employ workers in chemical management jobs and in maintenance and control of fluid systems. Id. at 682. Like Irrer, this case involves the sale of a product for which Severstal was experienced in using and handling. Severstal’s head of the masonry department, Jim Boggs, testified that his workers installed the nest block assembly, and filled the void with mortar without consulting with NARCO, and that he believed his men were qualified to select the proper material to fill the void. (Doc. 147, Ex. C at 187-88). At oral argument, NARCO’s counsel stated that Severstal employees have always installed and inspected nesting blocks and have been using plug and block assemblies since the 1980s.

NARCO argues that the “sophisticated user” doctrine also applies to Severstal’s breach of implied warranty theory. Michigan courts have extended the “sophisticated

user” doctrine to cover an implied warranty theory. Jodway v. Kennametal, Inc., 207 Mich. App. 622, 631 (1995). “A purchaser who has extensive knowledge of a product’s inherently dangerous propensities should not be allowed to claim that an implied warranty of merchantability exists as a guaranty against such characteristics.” Id. at 631. Severstal was a sophisticated user, skilled at installing the nest assembly block into its own ladles; thus, NARCO is entitled to summary judgment as to plaintiff’s of failure to warn and breach of implied warranty claims.

CONCLUSION

Defendant Special Shapes’ motion for summary judgment (Doc. 148) hereby is GRANTED IN PART as to the breach of implied warranty and design defect claims which hereby are DISMISSED, but is DENIED IN PART as to the manufacturing defect claim which may proceed.

Having found that no genuine issues of material fact exist, defendant NARCO’s motion for partial summary judgment (Doc. 147) hereby is GRANTED as to plaintiff’s design defect claim (Complaint, Count III, ¶ 31(a)), failure to warn claim (Complaint, Count III, ¶ 31 (e)(f)(g)), and breach of implied warranties claims (Complaint, Counts IV, V and VI). NARCO’s motion for summary judgment did not address plaintiff’s claims for breach of express warranty (Count I), breach of contract (Complaint, Count II), and manufacturing defect (Complaint, Count III, ¶ 31 (b)(c)(d)) and thus, this order does not address those claims.

Having failed to show cause, Severstal's request for costs and attorney fees hereby is DENIED.

Dated: June 9, 2009

s/George Caram Steeh
GEORGE CARAM STEEH
UNITED STATES DISTRICT JUDGE

CERTIFICATE OF SERVICE

Copies of this Order were served upon attorneys of record on June 9, 2009, by electronic and/or ordinary mail.

s/Josephine Chaffee
Deputy Clerk